

VORONTSOV, P.N.

Mechanization of canning in the Mtsensk Canning- and Dried  
Vegetable Combine. Kons.i ov.prom. 17 no.5:8-9 My '62.

(MIRA 15:5)

1. Mtsenskiy konservno-ovoshchesushil'nyy kombinat.  
(Mtsensk--Canning industry) (Assembly-line methods)

CA VORONTSOV, P.P.

31

Industrial applications of luminescent products in light industry. P. P. Vorontsov. *Izv. Akad. Nauk S.S.S.R., Ser. Fiz. 15, 801 (1951)*. Solid luminescent masses are made by direct incorporation of phosphors into the plastic by using ZnO, lithopone, or TiO<sub>2</sub> as filler. Incorporation into flexible plastic films of the polyvinyl type, which are made by heating and rolling, is more difficult; it is recommended to add the phosphor during the rolling process or, for plastics smeared on fabrics, by dusting during solidification. Fabrics can be coated with luminescent paints in polyvinyl or vinyl chloride plastics by electrostatic spraying, silk screening, or printing; polymerization is obtained by gentle heating. S. Pakswar

USSR / Human and Animal Morphology - Lymphatic System. S

Abs Jour : Ref. Zhur. - Biol., No. 22, 1958, No. 101492

Author : Vorontsov, P. P.

Inst : Ivanov Medical Institute

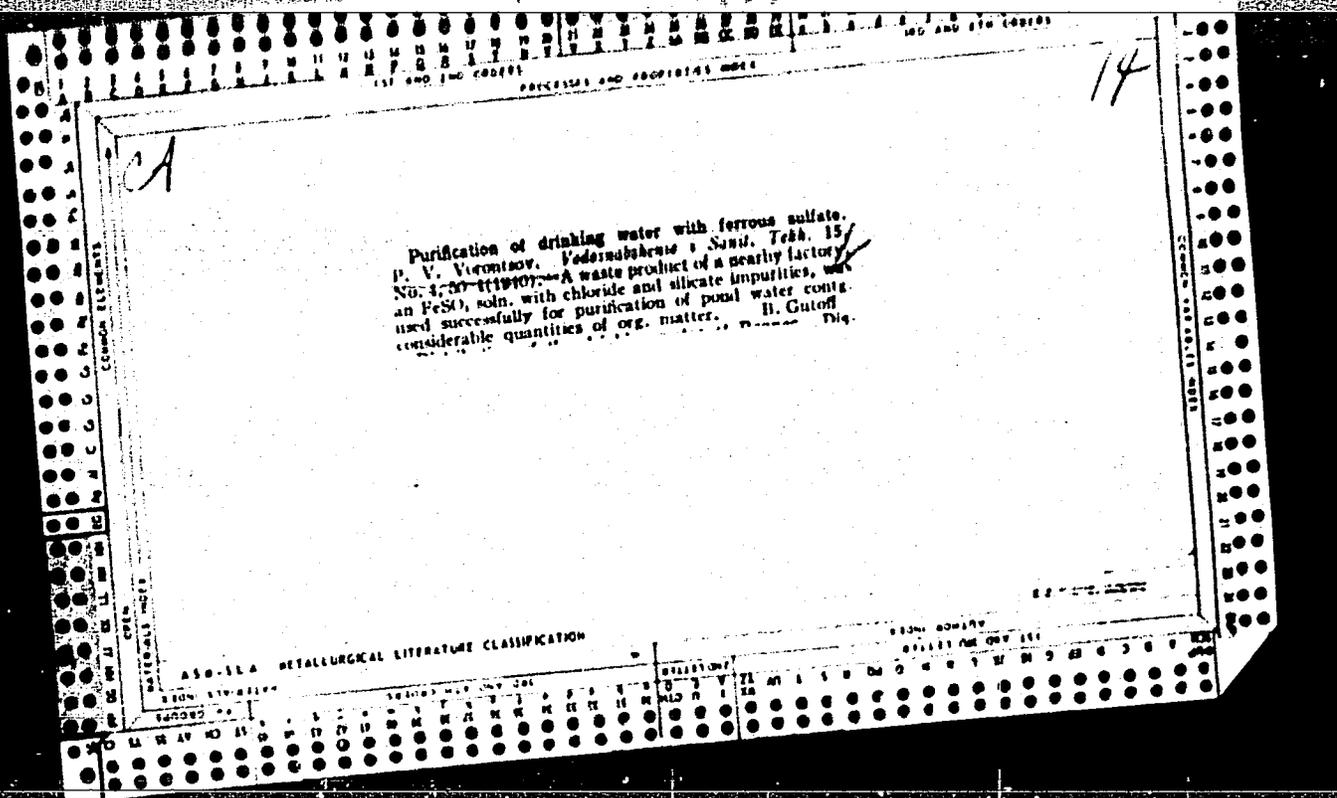
Title : The Connections of the Lymph System of the Stomach and the Abdominal Segment of the Esophagus.

Orig Pub : Sb. nauchn. tr. Ivanovsk. med. in-ta, 1957, No. 12, 291-296.

Abstract : In 16 cadavers of children and stillborn infants of 7-8 months, the interstitial polychrome injection and preparation method disclosed that the drainage lymph vessels (LV) of the abdominal segment of the esophagus and of the stomach empty into lymph nodes (LN) which are common to both of them and which include the pericardial i.e. about the cardial portion of the stomach, superior

Card 1/2

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1804. APPARATUS FOR TAKING LIQUID SAMPLES FROM THE AUTOCLAVE Vorontsov, R. V. (Zavodskaya Lab., 1945, 11, 237-8). An apparatus is described for sampling liquids at high temperatures.

C. A.

USSR - SLA METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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CA

7

**Ferrocyanide photometric determination of vanadium**  
 H. V. Vasyunov, *Zhurnal Priklad. Khim.* 13, 1185-7 (1947).  
 Good results were obtained in the analysis of V steels conig.  
 0.05-2.2% V.  $K_4Fe(CN)_6$  in acid solns. gives with  
 quinquivalent V either ppt. or colloidal solns. of vanadyl  
 ferri- and ferrocyanides. At V concn. less than 0.05  
 mg./ml. the solns. are transparent and stable (after 15-  
 20 min. at room temp.). At a temp. not over 15° the  
 extinction is proportional to the V concn.; at higher temps.  
 the max. value or one stable for 10 min. is used. Gelatin  
 or starch causes coagulation but excess ferrocyanide has  
 no effect. Dissolve the sample in  $HNO_3 + H_2SO_4$ , boil  
 to remove N oxides, cool, make basic with NaOH, cool,  
 and dil. to 200 ml. and filter. To an aliquot add phenol-  
 phtalein and acidify with HCl or  $H_2SO_4$ . Treat one  
 aliquot with 3 ml. of reagent (42 mg.  $K_4Fe(CN)_6$  per  
 ml.), dil. to 100 ml., shake 15 min., and measure in a color-  
 imeter with a blue filter. With standard steel, prep. a  
 curve for calcn. G. M. Kosolapoff

ASB 114 METALLURGICAL LITERATURE CLASSIFICATION

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CA

Coagulation of water by iron sulfate without the use of chlorine. R. V. Vignitskiy. *Zhur. Priklad. Khim.* (I. Applied Chem.) 23, 357-04 (1950).—Coagulation tests were made with Sverdlovsk city water, by using 0.5 mm. quartz sand filters and settling tanks with conical bottoms. Successful coagulation did not require preliminary oxidation of the sulfate or simultaneous addition of these reagents. Maintenance of theoretical value of 1/7.8 for chlorine/sulfate was not necessary; this value could be reduced and, in case of insufficient amount of dissolved oxygen in the water, the addition of chlorine can be dispensed with by increasing the feed of sulfate, at least during certain periods of the year. In case the dissolved oxygen is insufficient completely to oxidize the sulfate, air can be fed into the mixer. B. Z. Kamich

VORONTSOV, R. V.

Analytical Abst.  
Vol. 1 No. 2  
Feb. 1954  
General Analytical Chemistry

*(D) Chem*  
✓ 234. Empirical order of solubilities of ferrocyanides. R. V. Vorontsov (*J. Anal. Chem. U.S.S.R.*, 1953, 8 (4), 228-230). It was assumed that a cation having a less sol. ferrocyanide should replace the cation in the ppt. of a more sol. ferrocyanide. Solubilities of ferrocyanides in approx. neutral solution were assessed on this assumption by four different methods of studying the interactions. All results were consistent and gave the following order of cations with respect to decreasing solubilities of their ferrocyanides: Pb<sup>2+</sup>, Al<sup>3+</sup>, Bi<sup>3+</sup>, Sb<sup>3+</sup>, Mn<sup>2+</sup>, Cd<sup>2+</sup>, Co<sup>2+</sup>, Ni<sup>2+</sup>, Fe<sup>2+</sup>, Zn<sup>2+</sup>, Fe<sup>3+</sup>, Cu<sup>2+</sup>, Ag<sup>+</sup>. The results provide methods for purification of Ni electrolytes; detection of Cd in presence of Cu, and detection of Al in presence of all other cations.  
G. S. SMITH

*9-22-54*

Voronkov, R. U.

VORONTSOV, R.V.

USSR

Detection of ~~cadmium ions~~ in presence of copper ions in ammoniacal solution. R. V. Vorontsov and S. V. Gorbunova. *Trudy Komitii Nauki i Tekhn. Akad. Nauk S.S.S.R. Otdel. Khim. Nauk* 5(8), 127-32 (1954). Several known methods were tried and the best 3 were studied in detail. In the first method  $\text{NH}_4\text{Cl}$  was added to the sample until  $\text{H}_2\text{S}$  passed in, and the soln. filtered to remove  $\text{CuS}$ . The filtrate was dild. to twice its vol. with  $\text{H}_2\text{O}$  and  $\text{H}_2\text{S}$  passed in again to ppt.  $\text{CdS}$ . Detectable min. was 0.33 mg./ml. at the ratio  $\text{Cd}:\text{Cu} = 1:17$ .  $(\text{NH}_4)_2\text{SO}_4$  or  $\text{KNO}_3$  cannot be substituted for  $\text{NH}_4\text{Cl}$ . In the second method 1 ml. concd.  $\text{HCl}$  was added per 5 ml. of test soln.,  $\text{H}_2\text{S}$  passed in, and the soln. filtered. The filtrate was dild. to twice its vol. with  $\text{H}_2\text{O}$ , and  $\text{H}_2\text{S}$  passed in again to ppt.  $\text{CdS}$ . Detectable min. was 0.28 mg./ml. at the ratio  $\text{Cd}:\text{Cu} = 1:20$ . The third method must be followed exactly. To 3 ml. sample was added 9 ml. glycerol soln. (1:10), and 12 ml. 2N  $\text{NaOH}$ . The white  $\text{Cd(OH)}_2$  was washed carefully with  $\text{H}_2\text{O}$ . A trace of  $\text{H}_2\text{S}$  was directed at the filter to form yellow  $\text{CdS}$ . Detectable min. 0.04 mg./ml. at the ratio  $\text{Cd}:\text{Cu} = 1:20$ . Euzilla Mayerle

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VORONTSOV, R.V.

VORONTSOV, R.V.; BAGROVA, R.Kh.

On "fatiguing" of silver catalysts in formalin production.  
Gidroliz. i lesokhim.prom.8 no.5:15 '55. (MLRA 9:1)

1.Ural'skiy lesotekhnicheskiy institut.  
(Catalysts)

SOV/137-59-3-7312

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 3, p 337 (USSR)

AUTHORS: Krasivskaya, L.T., Vorontsov, R.V.

TITLE: Ferrocyanide Photocolorimetric Method for Determination of Molybdenum (Ferrotsianidnyy fotokolorimetricheskiy metod opredeleniya molibdena)

PERIODICAL: Tr. Ural'skogo lesotekhn. in-ta, 1958, Nr 12, pp 33-38

ABSTRACT: The authors investigated the determination of Mo with ferrocyanide. In order to do this, Mo was separated in the sulfide form, the precipitate was dissolved, and the solutions obtained were diluted with water to 100 cc. Then, in order to determine Mo, aliquot portions of the solutions were placed in Eggertz cylinders, water, 0.7 cc HCl (1:1), and 1 cc of 0.1 N  $K_4 [Fe(CN)_6]$  solution were added, the total volume was raised to 30 cc, and after 30 min a reading was made on an FEK-M colorimeter. In 20-mm cells and with a Mo content of approximately 0.03 mg/ml, the accuracy of the determination is 0.002-0.004%.

V.M.

Card 1/1

VORONTSOV, S.

Formation and utilization of a consumers' goods fund. Fin. SSSR 22  
no. 6:84-87 Je '61. (MIRA 14:6)

(Finance)

VORONTSOV, S.

VOYNOVA, P., inzhener; SOLNTSEVA, G., inzhener; VORONTSOV, S.

New developments in cutting up beef and sheep carcasses. *Mias. ind.*  
SSSR 26 no. 4:11-13 '55. (MLRA 8:10)  
(Meat cutting)

CHUYANOV,; VORONTSOV, S., inzhener; VOYNOVA, P., inzhener; LEONT'YEV, I.,  
inzhener

What should be the equipment of a modern meat combine. Mias. ind.  
SSSR 26 no.3:30-37 '55. (MIRA 8:9)

1. Glavnyy inzhener Moskovskogo myasokombinata (for Ghuyanov).
  2. Moskovskiy myasopererabatyvayushchiy zavod (for Vorontsov).
  3. Vsesoyuznyy nauchno-issledovatel'skiy institut myasnoy promyshlennosti (for Voynova).
  4. Glavnoye upravleniye myasnoy promyshlennosti (for Leont'yev)
- (Meat industry--Equipment and supplies)



V. BOGUSOV, S. A.

Lechennoye i profilakticheskoye deystviye fenotiazina pri askaridioze i  
geterakidoze kur, "Works on Helminthology" on the 75th Birthday of K. I. Skryabin,  
Izdat. Akad. Nauk, SSSR, Moskva, 1953, page 115.

ВОРОНЕЖСКИЙ, С. А.

Sep 53

USSR/Medicine-Veterinary, Drugs

"Technical Thiodiphenylamine, the New Anthelmintic Against Haemonchus in Sheep," Vet Phys. S. A. Vorontsov, Grodno Oblast Agr Admn

Veterinariya, Vol 30, No 9, pp 30-31

Technical thiodiphenylamine (phenothiazine which has not been purified) is a fine, lightweight, grayish-green powder. It emulsifies better in water and is more convenient for use in the mass treatment of animals and fowl for parasitic worms than the veterinary phenothiazine. Technical thiodiphenylamine

270173

paste, prepared in a form of a 10% emulsion in ordinary water suspension, has proved its worth in the treatment of 150 thousand sheep against parasitic worms. Not a single case of poisoning was noted.

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VORONTSOV, S. A.

Min Agriculture USSR. All-Union Inst of Helminthology imeni Academician K.I. Skryabin (VIGIS).

VORONTSOV, S. A.- "The therapeutic and prophylactic effect of phenothiazine in ascaridosis and heterakidosis of hens and chicks." Min Agriculture USSR. All-Union Inst of Helminthology imeni Academician K. I. Skryabin (VIGIS). Moscow, 1956. (Dissertation for the Degree of Candidate in Veterinary Sciences)

SO: Knizhnaya Letopis' No. 20, 1956

VORONTSOV, S. A. (Candidate of Veterinary Sciences, Voronezh NIVS)

"Echinoriosis of ducks"

Veterinariya, vol. 39, No. 7, July 1962 p. 52

VORONTSOV, S.A., kand. veterin. nauk

Echinuria infestation in ducks. Veterinariia 39 no.7:52-53 J1 '62.  
(MIRA 18:1)

1. Voronezhskaya nauchno-issledovatel'skaya veterinarnaya stantsiya.

L 1235-66 EWT(m)/EPA(w)-2/EWA(m)-2 IJP(c) GS

ACCESSION NR: AT5007977

S/0000/54/000/000/1056/1060

47  
43  
BH

AUTHOR: Belovintsev, K. A.; Belyak, A. Ya.; Vorontsov, S. S.; Cherenkov, P. A.

TITLE: Strong-current microtron injector

SOURCE: International Conference on High Energy Accelerators, Dubna, 1963.  
Trudy. Moscow, Atomizdat, 1964, 1056-1060

TOPIC TAGS: low energy accelerator, magnetron, electron beam

ABSTRACT: By analyzing the characteristics of various low-energy accelerators (Van-de-Graaf generator, cascade generator, pulse transformer, microtron, linear accelerator, etc.) from the viewpoint of their utilization as an injector for the synchrotron, the authors found the application of the microtron for this purpose very promising. The determining motives of their selection were the simplicity of design and construction, high monoenergetic character, good geometric beam parameters, ease of output of a large part of the accelerated electrons, and compactness of this accelerator. In order to experimentally verify the theoretical assumptions, and also to study new possibilities, mainly concerned with the enhancement of the intensity, a 7-Mev microtron was erected and put into operation (October 1961) in the Photomeson Processes Laboratory, Physics Institute im. P. N.

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Lebedev, Academy of Sciences SSSR. The present report discusses the principal characteristics of the microtron. This accelerator was described in detail in another work (Belovintsev, K. A., Belyak, A. Ya., Gromov, A. H., Moroz, Ye. M., Cherenkov, P. A. *Atomnaya energiya* 14, 359 (1963)). The magnet of the microtron (total weight of the iron and windings--2 tons) ensures the creation of homogenous (not worse than 0.3%) field in the circular region 50 cm in diameter for a gap of 12 cm between the pole terminals 60 cm in diameter. The maximum value of the homogeneous field in the gap is 4000 oersteds. The magnet's power supply is stabilized with an accuracy of 0.05%, and the power consumed in the operational state (around 1000 oersteds) amounts to 450 watts. The magnet poles are the covering of the vacuum chamber, realized in the form of a brass ring with nine soldered outlet pipes. The vacuum exhaust system consists of a mechanical fore-vacuum and para-oil pumps. A vacuum of  $10^{-6}$  mm of mercury in the chamber's working volume is reached in 1.3 hours after it is attached. The microtron high-frequency system includes the following elements: (a) magnetron generator of 10 cm range operating in the pulse state at a frequency of repetition 50 or 100 hertz and pulse duration of 3 microseconds; (b) waveguide track with cross-section  $72 \times 44$  mm operating in the fundamental wave mode  $H_{01}$ ; (c) plane cylindrical resonator in which oscillations of

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L 4235-66

ACCESSION NR: AT5007977

4

the type E<sub>010</sub> are excited (Kapitsa, S. P.; Bykov, V. P.; Melekhin, V. N. *ZhETF* 41, 368 1961)). Works on the study and improvement of the characteristics of the microtron as a strong-current injector are continuing. Especially interesting is the study of the possibility of the microtron as an injector of positrons for various storage devices (Belovintsev, K. A.; Denisov, F. P. *Atomnaya energiya* (in print)). "In conclusion the authors thank their associates at the Photomeson Laboratory, A. M. Gromov, A. V. Borisov, and V. S. Malofeyev, for their participation in the individual experiments and developments." Orig. art. has: 5 figures.

ASSOCIATION: Fizicheskiy institut imeni P. N. Lebedeva AN SSSR (Physics Institute, AN SSSR)

SUBMITTED: 26May64

ENCL: 00

SUB CODE: NP

NO REF SOV: 004

OTHER: 000

*beh*  
Card 3/3

VLASOV, Aleksey Andreyevich; GREBENSHCHIKOV, R.A., inzh., retsenzent;  
VORONTSOV, S.D., inzh., red.; KAN, P.M., red.izd-va; BODROVA,  
V.A., tekhn. red.

[Water-jet propelled river vessels] Rechnye vodometnye suda.  
Moskva, Izd-vo "Rechnoi transport," 1962. 156 p. (MIRA 15:5)  
(Inland navigation) (Water jet)

VORONTSOV, S.I.

Planning and cost accounting in repair shops. Khim.prom no.8:495-  
498 D '56. (MIRA 10:1)

1. Dorogomilovskiy khimicheskiy zavod.  
(Chemical plants)

VORONTSOV, S.M., polkovnik veterinarnoy sluzhby v otstavke, doktor veter.  
nauk

Antiepidemiologic measures in the Soviet Army. Veterinariia 42  
no.549-20 My '65. (MIRA 18:6)

VORONTSOV S.M.

ALICHKIN, S.L.; AGRINSKIY, N.I.; ANDREYEV, G.F.; BAKUMENKO, G.D.;  
VORONTSOV, S.M.; VOYSTRIKOV, I.V.; GRADYUSHKO, G.M.; ZYKOV, A.V.  
IVANOVTSSEV, P.V.; KINBURG, M.Ya.; KOVALEV, P.A.; KOZLOVSKIY, Ye.V.  
KORNIYENKO, A.P.; KOLYAKOV, Ya.Ye.; LAKTIONOV, A.M.; LEVADNIY, B.A.  
MEDVEDEV, I.D.; NOVIKOV, N.V.; ORLOV, F.M.; OSTROVSKIY, A.A.;  
ORTSEV, V.P.; PENIONZHKO, A.M.; POLOZ, D.D.; PRITULIN, P.I.;  
PETUKHOVSKIY, A.A.; ROGALEV, G.T.; RYBAK, P.Ya.; SUTYAGIN, G.P.  
TUKOV, R.A.; KHAVCHENKO, D.F.; CHERNETSKIY, T.I.; SHPATER, N.M.  
SHUSTOVSKIY, F.A.

Nikolai Vasil'evich Spesivtsev. Veterinariia 35 no.2:96 P '58.  
(MIRA 11:2)

(Spesivtsev, Nikolai Vasil'evich, 1901-1957)

VORONTSOV, S.M.

VORONTSOV, Sergey Mikhaylovich; BLINDER, Ye.N., redaktor; LOMILINA, L.N.  
tekhnicheskly redaktor.

[Financial planning in industrial cooperatives] Finansovoe planirovanie v promyslovoi kooperatsii. 3-e izd. Moskva, Vses. kooperativnoe izd-vo, 1955. 177 p. (MLRA 8:11)  
(Finance) (Cooperative societies)

*VORONTSOV, S.N.*  
VORONTSOV, S.N., inzh.

Methods for heat calculation of drying chambers. Vest.elektroprom.  
28 no.8:60-62 Ag '57. (MIRA 10:10)

1.Vsesoyuznyy elektrotekhnicheskiy institut.  
(Drying apparatus)

<sup>TS</sup>  
VORONOV, S.P. and MAYOROV, S.A.

Instrument Ball Bearings. Oborongiz (1951)

BRYUNETKIN, M.G.; VORONTSOV, S.P.

Increasing the durability of open-hearth furnace roofs.  
Metallurg 10 no.1:18-19 Ja '65.

(MIRA 13:4

1. Chelyabinskiy metallurgicheskiy zavod.

VORONTSOV, S.P.; BOROZINETS, N.A.

Unit for sorting and milling rubbles of chrome-magnesite bricks.  
Biul.tekh.-ekon.inform.Gos.nauch.-intl.inst.nauch.i t, kh.inform.  
18 no.1:61-62 Ja '65. (MIRA 18:4)

VORONTSOV, S.V.

Karelia paper industry workers strive for the acceleration of technological progress. Bum.prom. 36 no.3:5-6 Mr '61. (MIRA 14:4)

1. Predsedatel' Karel'skogo sovmarkhoza.  
(Karelia--Paper industry)

VORONTSOV, V.

Students started practical training. NTO no.12:38-39 D '59 (MIRA 13:3)

1. Predsedatel' soveta Nauchno-tekhnicheskogo obshchestva Podol'skogo mekhanicheskogo zavoda.

(Podol'sk--Education, Cooperative)

VORONTSOV, V.E.

Biokhimiia chala (Biochemistry of tea). Moskva, Pishchepromizdat, 1946. 278 p.

SO: Monthly List of Russian Accessions, Vol 7, No 9, Dec 1954



NIKITINA, A.P.; KOROLEV, Yu.M.; VORONTSOV, V.G.

Palygorskite and saponite from the weathering surface of  
the Kursk Magnetic Anomaly. Kora vyvetr. no.6:48-54 '63.  
(MIRA 17:9)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR, Moskva (for Nikitina).
2. Institut geologii i razrabotki goryuchikh iskopayemykh AN SSSR, Moskva. (for Korolev).
3. Nauchno-issledovatel'skiy institut stroitel'nogo osusheniya, Belgorod (for Vorontsov).

BROVKO, Aleksey Petrovich; VORONISOV, V.G., retsenzent; YEGOROV,  
V.Ye., retsenzent; ZAKHAROV, A.P., retsenzen, KROPACHEV,  
V.P., retsenzent; PASTUKHOV, N.V., retsenzent;  
PEREGUDOV, V.V., retsenzent; PONOMAREV, V.A., retsenzent;  
RUDEV, A.M., retsenzent; KHROPUNSKIY, Ye.A., retsenzent;  
SMIRNOV, A.A., inzh., retsenzent

[Contact networks in strip mines] Kontaktnaya set' na  
kar'erakh. Moskva, Nedra, 1964. 207 p. (MIRA 18:2)

1. Inzhenerno-tekhnicheskiye rabotniki Korkinskogo tresta  
ugol'nykh predpriyatiy (for all except Brovko).

ACC-NR: AP7001217 SOURCE CODE: UR/0141/66/009/006/1155/1163  
AUTHOR: Deryugin, I. A.; Vorontsov, V. I.  
ORG: Kiev State University (Kiyevskiy gosudarstvennyy universitet)  
TITLE: Quadratic relationships in electrodynamics of moving media  
SOURCE: IVUZ. Radiofizika, v. 9, no. 6, 1966, 1155-1163  
TOPIC TAGS: electrodynamics, moving medium, perturbatiol method, quadratic relationship, resonator, waveguide  
ABSTRACT: A generalization is given of well known quadratic relationships of macroscopic electrodynamics (generalized Umov-Poynting's theorem, Lorentz lemma and lemmas for the complex conjugate values) for the electrodynamics of moving generalized gyrotropic media. Reciprocity principle is correlated with the fundamental operations of space-time inversion, charge and complex conjugations and their combinations. The classification is given for the reciprocity types of moving material media in accordance with the types of symmetry. It was shown that the application of quadratic relationships in electrodynamics of moving media

Card 1/2 UDC: 538.3

ACC NR: AP7001217

lead to a derivation of basic formulas for the calculation of changes of waveguides and resonators based on the perturbation method. Orig. art. has: 35 formulas.  
[Authors' abstract] [AM]

SUB CODE: 09, 20/SUBM DATE: 29May65/ORIG REF: 011/OTH REF: 001/

Card 2/2

L 7983-66

ACC NR: AP5026486

SOURCE CODE: UR/0286/65/000/019/0012/0012

AUTHORS: Mitrofanov, A. I.; Vorontsov, V. I.; Gordon, A. B.

ORG: none

TITLE: A method for obtaining a filter. Class 12, No. 175035 [announced by Scientific Research, Design, and Construction Institute for Draining the Deposits of Natural Resources (Nauchno-issledovatel'skiy i proyektno-konstruktorskiy institut po osusheniyu mestorozhdeniy poleznykh iskopayemykh)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 19, 1965, 12

TOPIC TAGS: epoxy, glass fabric, filter

ABSTRACT: This Author Certificate presents a method for obtaining filters from glass fabric by saturating it with a composition based on epoxy resin. To obtain the necessary porosity (permeability) in the filter, the saturated glass fabric is blown through with hot compressed air before the composition hardens.

SUB CODE: IE/ SUBM DATE: 04Jul64

Card 1/1

UDC: 66.067.322

L 5276-66 EWT(1) IJP(c) GS

ACCESSION NR: AT5024191

UR/0000/65/000/000/0068/0080

AUTHORS: Deryugin, I. A.; Vorontsov, V. I.

TITLE: The propagation of electromagnetic waves in a moving gyrotropic medium

SOURCE: AN UkrSSR. Fizika komet i meteorov (Physics of comets and meteors). Kiev, Izd-vo Naukova dumka, 1965, 68-80

TOPIC TAGS: electromagnetic wave phenomenon, plasma electromagnetic wave, Maxwell equation, Lorentz transformation, plasma wave propagation, plasma electromagnetic wave

ABSTRACT: A theory is proposed on the propagation of plane nonuniform electromagnetic waves in a moving gyrotropic medium in the general case when the medium moves along a constant magnetic field. A six-dimensional bivector space is used. Notation of the six-dimensional permeability tensors in terms of 4 sets of three-dimensional tensors allows the material equations of moving gyrotropic media to be represented as four vector equations:

$$\vec{D} = -(\vec{M})\vec{E} + i\beta(\vec{N})\vec{B},$$

$$\vec{H} = i\beta(\vec{N})\vec{E} + (\vec{M})\vec{B},$$

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L 5276-66

ACCESSION NR: AT5024191

2

$$\vec{E} = -(\vec{M})\vec{D} + i\beta(\vec{N})\vec{H},$$

$$\vec{B} = i\beta(\vec{N})\vec{D} + (\vec{M})\vec{H}.$$

The equation of the normals for longitudinally moving gyrotropic media is

$$\begin{aligned} & \frac{\zeta_1^2 \gamma^4}{\epsilon_+ \mu_+} (1 - \beta^2 \mu_+ \epsilon_+) (1 - \beta^2 \epsilon_+ \mu_+) - \frac{1}{4} \frac{\zeta_1^4 \beta^2 \gamma^8}{\epsilon_+ \mu_+ \epsilon_+ \mu_+} (1 - \beta^2 \zeta_2)^2 (\epsilon_+ \mu_+ - \epsilon_- \mu_-)^2 - \\ & - \frac{\zeta_1^2 \gamma^2}{2} \left( \frac{\mu_+}{\mu_-} + \frac{\epsilon_+}{\epsilon_-} \right) (1 - \beta^2 \epsilon_+ \mu_+) \times \\ & \times \left\{ 1 - \frac{\gamma^4}{\epsilon_- \mu_-} [\zeta_2 (1 - \beta^2 \epsilon_- \mu_-) + \beta (\epsilon_- \mu_- - 1)]^2 \right\} - \\ & - \frac{\zeta_1^2 \gamma^2}{2} \left( \frac{\mu_-}{\mu_+} + \frac{\epsilon_-}{\epsilon_+} \right) (1 - \beta^2 \epsilon_- \mu_-) \times \\ & \times \left\{ \frac{\gamma^4}{\epsilon_+ \mu_+} [\zeta_2 (1 - \beta^2 \epsilon_+ \mu_+) + \beta (\epsilon_+ \mu_+ - 1)]^2 \right\} + \\ & + \epsilon_+ \mu_+ \left\{ 1 - \frac{\gamma^4}{\epsilon_+ \mu_+} [\zeta_2 (1 - \beta^2 \epsilon_+ \mu_+) + \beta (\epsilon_+ \mu_+ - 1)]^2 \right\} \times \\ & \times \left\{ 1 - \frac{\gamma^4}{\epsilon_- \mu_-} [\zeta_2 (1 - \beta^2 \epsilon_- \mu_-) + \beta (\epsilon_- \mu_- - 1)]^2 \right\} = 0. \end{aligned}$$

Card 2/3

L 5276-66

ACCESSION NR: AT5024191

3

When an electromagnetic wave is propagated at an arbitrary angle to the longitudinal axis, it can be expanded into normal waves TEM, TM, or TE. Solution of the linear equations of an alternating magnetic field for a longitudinally moving gyrotropic medium indicates that circularly polarized waves TEM, TM, and TE are normal. Orig. art. has: 1 diagram and 59 formulas.

ASSOCIATION: GAOANUK 4455

SUBMITTED: 21May65

ENCL: 00

SUB CODE: ME

NO REF SOV: 004

OTHER: 000

BC

Card 3/3

VORONTŠOV, V.I.

Utilizing the engineering experience of students in physics  
classes. Fiz.v shkole 20 no.1:89-90 Ja-F '60. (MIRA 14:10)

1. 1-ya shkola rabochey molodezhi, g. Yelets.  
(Physics--Study and teaching)

L 14368-63 EWT(1)/BDS AFFTC/ASD/ESL-3 IJP(C)  
ACCESSION NR: AP3001824 P/0045/63/023/005/0655/0656

AUTHOR: Levashev, A. E.; Vorontsov, V. I.

TITLE: The orientability of the physical tetrad in relativistic electrodynamics

SOURCE: Acta physica polonica, v. 23, no. 5, 1963, 655-656

TOPIC TAGS: physical tetrad, relativistic electrodynamics, covariance, covariant transformation, fictitious magnetic current, fictitious magnetic charge

ABSTRACT: The covariance of the equations of electrodynamics in the presence of free charges and currents, with respect to dual transformations, can be regarded as a corollary of the orientability of the physical tetrad. The authors conclude that their 8 equations are obviously covariant not only under the Lorentz' transformations, but also under dual transformations. Thus, alongside of the electric charges and currents expressed by the four-dimensional vector  $j^{\mu}$  which defines the vector  $e_{\mu}$  of the physical tetrad, there must exist the physical quantity  $j_{\mu\nu}$  in the case of the supposed influence of space-time orientability on electric processes. Conversely, as soon as this

Card 1/2

L 14568-63

ACCESSION NR: AP3001824

physical quantity is experimentally established, this fact can serve as an argument in favor of the orientability of the physical tetrad.

Orig. has 8 numbered equations.

ASSOCIATION: Belorussian State University, Minsk, Belorussian SSR

SUBMITTED: 16Aug62

DATE ACQ: 01Jul63

ENCL: 00

SUB CODE: MM, GE

NO REF SOV: 003

OTHER: 001

Card 2/2

S/250/63/007/002/003/008  
A059/A126

AUTHORS: Levashev, A. Ye., Vorontsov, V. I.

TITLE: "Magnetic charges" and the dual covariance of the equations of electrodynamics

PERIODICAL: Doklady Akademii nauk BSSR, v. 7, no. 2, 1963, 83 - 86

TEXT: As has been previously shown, a dissymmetry of the electron in excess of  $m_0 c$  must lead to interactions lower by  $\alpha^2$  times as compared to the classical one, where  $\alpha$  is the constant of the fine structure, the dissymmetry of the classical electron being  $m_0 c / \alpha$ . The increased dissymmetry  $m_0 c$  can be ascribed to the appearance of the trivector  $3! e[\lambda e^\mu e^\nu]$  where  $\underline{m}$  is the area of antisymmetry. Thus, the problem of examining the electrodynamics appears which considers the possibility of a dissymmetry of electric charges. An arbitrary contravariant tensor  $a^{\mu_1 \dots \mu_m}$  is transformed to some of its dual tensors:

$$a^{\lambda_1 \dots \lambda_{4-m}} = \frac{1}{m!} \epsilon[\lambda_1 \dots \lambda_{4-m} \mu_1 \dots \mu_m] a^{\mu_1 \dots \mu_m}, \quad (2.3)$$

Card 1/3

S/250/63/007/002/003/008  
A059/A126

"Magnetic charges" and the...

where  $\epsilon[\lambda_1 \dots \lambda_4]$  is some tetravector. Finally, the field equation

$$\frac{\partial L}{\partial a_{\bar{\mu}}} - \nabla_{\nu} \frac{\partial L}{\partial \nabla_{\nu} a_{\bar{\mu}}} = 0 \quad (2.11)$$

is obtained, where  $a_{\bar{\mu}}$  is the potential corresponding to the Lagrangian introduced. Thus, together with the electric charges and currents expressed by the tetradimensional vector  $j^{\mu}$ , the physical value  $j[\lambda\mu\nu]$  with the symmetry  $\underline{m}:\infty$  should exist in the case of the assumed influence of the orientability of space-time on the electromagnetic processes and, consequently, of the covariance with respect to the dual transformations (2.3). The component  $j[lmn]$  where  $lmn = 1, 2, 3$  corresponds to what is usually termed magnetic charge, with the spherical symmetry  $j[lm0]$  reserved by the magnetic current. If the electric charge and current distribution is such that it possesses the dissymmetry  $\underline{m}:\infty$  the trivector  $j[\lambda\mu\nu]$  appears in electrodynamics and corresponds to the "magnetic" charges and currents. In particular, it can be shown that the dissymmetry  $\underline{m}:\infty$  appears in the bremsstrahlung of electric systems having the symmetry  $\underline{m}:\infty$ . A. V. Shubnikov and A. A. Pistol'kors are mentioned.

Card 2/3

"Magnetic charges" and the...

S/250/63/007/002/003/008  
A059/A126

ASSOCIATION: Belorusskiy gosudarstvennyy universitet im. V. I. Lenina  
(Belorussian State University imeni V. I. Lenin)

PRESENTED: by B. I. Stepanov, academician of the AS BSSR

SUBMITTED: June 18, 1962

Card 3/3

ACC NR: AP7002590

(A, N)

SOURCE CODE: UR/0413/66/000/023/0090/0090

INVENTORS: Polukhin, P. I.; Golubchik, R. M.; Milenyy, K. F.; Vorontsov, V. K.

ORG: none

TITLE: An assembly for determining optically the stress-strain state of rollers and products in the process of rolling. Class 42, No. 189202

SOURCE: Izobrotaniya, promyshlennyye obraztsy, tovarnyye znaki, no. 23, 1966, 90

TOPIC TAGS: rolling mill, metal rolling, optic method, optic instrument, optic image, optic system, metal stress, strain, light reflection, light transmission

ABSTRACT: This Author Certificate presents an assembly for determining optically the stress-strain state of rollers and products in the process of rolling. The assembly contains a rolling mill with a base which carries driving working rollers with reducers and clamps, and also an optical assembly for either reflected or transmitted light (see Fig. 1). To produce a transverse rolling process involving two, three, or four rollers, and to produce a longitudinal rolling process involving two rollers, the rolling mill is supplied with demountable idler rollers (bars). The base is provided with openings for holding idler and working rollers in various combinations. To obtain a clear image of stresses and to shorten the length of the mill while working with equipment for the transmitted light or with interferometers, directing devices are fixed in the openings of the base. Yokes with working rollers

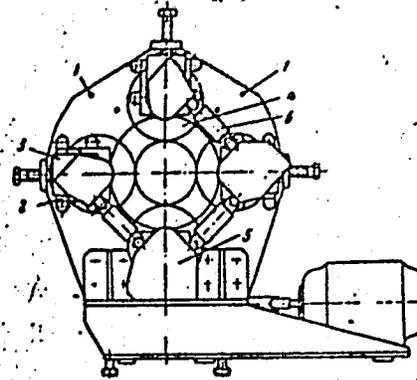
UDC: 620.1.05:539.388.22

0730 2706

Card 1/2

ACC NR: AP7002590

Fig. 1. 1 - openings in the base; 2 - directing devices; 3 - yoke; 4 - working roller; 5 - reducer; 6 - hinged telescopic clutch



placed on brackets and carrying reducers or idle rollers (bars) are mounted in these directing devices. To produce a progressive motion of the turning rollers which compress a turning product, a telescopic hinged clutch is placed between the driving engine and the reducer of each roller. Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 20Jan65

Card 2/2

ACC NR: AT7002108

(N)

SOURCE CODE: UR/0000/66/000/000/0223/C234

AUTHOR: Vorontsov, V. K.; Polukhin, P. I.

ORG: none

TITLE: The use of the photosensitive coating method for studying plastic deformation processes in metals

SOURCE: Vsesoyuznaya konferentsiya po polarizatsionno-opticheskomu metodu issledovaniya napryazheniy. 5th, Leningrad, 1964. Polarizatsionno-opticheskiy metod issledovaniya napryazheniy (Polarizing-optical method of investigating stresses); trudy konferentsii. Leningrad, Izd-vo Leningr. univ., 1966, 223-234

TOPIC TAGS: photosensitivity, plastic coating, plastic deformation, stress analysis, metal pressing, metal rolling, metal forging

ABSTRACT: Optically sensitive coatings and shapes were used to study the plastic deformation of metals in rolling and forging. Four different coatings and their properties were given for studying maximum deformations of 20%. These had the following compositions: (1) 25 g saturated polyether and 15 g maleic anhydride, (2) 25 g saturated polyether and 4 g polyethylene polyamide, (3) 50 g saturated polyether and 15 g maleic anhydride, and (4) 40 g unsaturated polyether and 15 g phtaleic anhydride. The optical sensitivity of these coatings  $\beta = m/et$  ranged from 30 to 35 1/mm, where  $m$  is

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ACC NR: AT7002108

the order of the isochrome,  $\epsilon$  is the relative deformation, and  $t$  is the coating thickness. Two methods of studying pressure deformation in metals were used: coating of the lateral sides of samples before deformation, and cementing optically sensitive materials inside of samples. For example, the upsetting of a lead ring of 100 mm diameter on a mandrel was studied by coating the face of the ring and plastically deforming it. Isochromatic and isoclinic lines were observed and the stress state throughout the ring deduced. Parameters in the rolling process were also analyzed by coating the sides of aluminum slabs of varying dimensions. The roll diameters ranged from 135 to 190 mm. Photographs were shown of the stress patterns developed in the coatings by rolling, and isobars were outlined in a schematic drawing indicating the magnitudes of  $\sigma_x$ ,  $\sigma_y$ , and  $\tau_{xy}$  in the deformation zone. The punching process was studied on composite samples of lead glued to photosensitive pieces of plastic. The glued junctions were made along vertical and horizontal planes of symmetry. Photographs were shown of the isoclinic and isochromic lines resulting from 20% punch deformation. The above techniques could be used to obtain the stress distribution in the plastic flow region for given boundary conditions. Orig. art. has: 7 figures, 2 tables.

SUB CODE: 13,11,20/ SUBM DATE: 14Jun66/ ORIG REF: 002

Card 2/2

L 17415-66 EWT(m)/EWA(d)/EWP(t) JD/HW

ACCESSION NR: AP5013676

SOURCE CODE: UR/0182/65/000/005/0001/0005

AUTHOR: Polukhin, P.I.; Teterin, P.K.; Luk'yanov, V.P.; Vorontsov, V.K.; Kartoshkin, A.A.

ORG: none

TITLE: Stress deformation state in rolling circular blanks

6,44.55

39  
B

SOURCE: Kuznechno-shtampovochnoye proizvodstvo, no. 5, 1965, 1-5

TOPIC TAGS: stress analysis, strain, material deformation, circular forging, circular blank, blank, reduction, tensile stress, applied load, load, mandrel diameter effect, ram form effect, reduction degree effect

ABSTRACT: This study was carried out because there is an increasing need of circular forgings from difficultly deforming stainless and heat resistant steels and alloys. The stress deformation state of the metal in the area of deformation during the rolling of the circular blanks on a mandrel was investigated with respect to the form of the working surface of the ram (plane, concave, and convex), diameter of the mendrel, and degree of reduction. The experimental results show

Card 1/2.

2

L 17415-66

ACCESSION NR: AP5013676

that 1) the process of reduction of circular blanks on a mandrel is accompanied by the occurrence of tensile stress in the deformation area perpendicular to the applied load, 2) the tensile stress and the zone it affects in the deformation area markedly decrease with increase in the degree of reduction, and 3) an increase in the mandrel diameter and application of a concave ram tends to decrease the area of action of the tensile stress as well as of its absolute value. Orig. art. has: 4 formulas, 5 figures, and 3 tables. 0

SUB CODE: 13,11

SUBM DATE: 00

ORIG REF: 004

OTH REF: 000

Card 2/2 nst

109160

41168

S/153/62/005/004/006/006  
E075/E436

**AUTHORS:**

Shchegolevskaya, N.A., Sokolov, S.I., Polukhin, P.I.,  
Vorontsov, V.K.

**TITLE:**

On the polymeric coatings on metals for the study of  
plastic deformations by the optical method

**PERIODICAL:**

Izvestiya vysshikh uchebnykh zavedoniy. Khimiya i  
khimicheskaya tekhnologiya, v.5, no.4, 1962, 647-652

**TEXT:**

A possibility was investigated of obtaining optically sensitive layers, based on epoxy resins and polyesters, suitable for the investigation of sufficiently large plastic deformations of metals. It was found that the coatings with different maximum deformations, optical sensitivity and adhesiveness can be produced from epoxy resins and various polyesters of dibasic acids and glycols, polyesteracrylates and dibutylphthalate as plasticizers. They could also be produced by changing the conditions of curing, both hot and cold curing processes being suitable. For hot curing, maleic and phthalic anhydrides are used as curing agents; for cold curing, polyethylenepolyamines. A method of gradual heating was employed to produce the coatings without any residual

Card 1/2

On the polymeric coatings ...

S/153/62/005/004/006/006  
E075/E436

internal strains. The best results were obtained by heating to 100°C and subsequent cooling at the rate of 2°C per hour. The optical effect of the coatings was directly proportional to their deformations; this is expressed by  $R_t = \alpha t(\epsilon_1 - \epsilon_2)$ , where  $R_t$  - linear difference in displacement,  $\alpha$  - optical coefficient of deformation,  $t$  - double thickness of polymer coating and  $\epsilon_1$  and  $\epsilon_2$  - the main deformations. The data obtained permit to choose appropriate resin composition and curing conditions in relation to maximum deformation produced (up to 30%). There are 3 figures and 1 table.

ASSOCIATION: Moskovskiy institut khimicheskogo mashinostroyeniya i Moskovskiy institut stali (Moscow Institute of Chemical Machinery and Moscow Steel Institute)

SUBMITTED: April 24, 1962

Card 2/2

POLUKHIN, P. I., prof., doktor tekhn. nauk; VORONTSOV, V. K., inzh.

Use of optically active coatings in the study of processes  
occurring during the press-working of metals. Sbor. Inst. stali  
i splav. no.40:277-292 '62. (MIRA 16:1)

(Deformations(Mechanics)--Testing)  
(Optical films)

S/148/63/000/001/006/019  
E193/E383

AUTHORS: Polukhin, P.I., Vorontsov, V.K. and Rutman, G.G.

TITLE: Investigation of the stress and strain state in rolling. Part I

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, no. 1, 1963, 58 - 66

TEXT: The object of the present investigation was to study the distribution of strain and stress in the actual deflection region as a function of the geometric parameters of the rolling process. Strip specimens, 10-73 mm thick, were investigated on a laboratory, two-high stand with rolls 139 and 185 mm in diameter, the absolute reduction varying between 0.5 and 6.5 mm so that the  $l_d/h_{sr}$  ratio covered ranged from 0.12 - 1.2 ( $l_d$  is the length of the geometrical deformation zone,  $h_{sr}$  being the thickness of the strip). Stresses and strains were determined by using optically sensitive coatings and inserts, tensometric measurements and the coordinate-network method. The results were

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Investigation of the stress ....

S/148/63/000/001/006/019  
E195/E383

used to plot the isoclinic curves ( $\theta = \text{const}$ , where  $\theta$  is the angle of deflection and one of the principal strains) and curves representing  $\varepsilon_1 - \varepsilon_2 = \text{const}$ . The results of analysis of these curves can be summarized as follows: 1) rolling in the  $l_d/h_{sr}$  range studied is characterized by nonuniform strain and stress distribution, this effect being particularly marked in the material entering the rolls; 2) as the  $l_d/h_{sr}$  ratio increases, the degree of nonuniformity of strains normal to the direction of rolling in the metal leaving the rolls decreases and the character of flow of the metal entering the rolls changes; 3) three types of the stress-strain state can be distinguished, depending on the value of  $l_d/h_{sr}$ : a) a most uniform distribution of stress and strain across the thickness of the strip in a large part of the geometrical deformation zone is attained at  $l_d/h_{sr} = 1.2$ , some degree of nonuniformity being observed in metal entering the rolls; the rolling process under these conditions is characterized by triaxial compression in the entire actual deformation zone with the exception of the region adjacent to the plane in the pre-deformation zone, which is not under external

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Investigation of the stress ....

S/148/63/000/001/006/019  
E193/E383

load; b) at  $0.3 < l_d/h_{sr} < 0.8$  deformation becomes less uniform; the state of triaxial compression does not extend to the central layer of the strip in the geometrical deformation zone and large tensile stresses are set up in the pre-deformation zone which - in the case of metal with a low margin of plasticity - can lead to fracture; c) at  $l_d/h_{sr} < 0.3$ , the metal is compressed throughout its entire thickness but there is a great difference between the strength in the surface and central layers of the strip; the stress state is characterized by high tensile stresses along the axis of symmetry, both in the pre-deformation region and in the geometrical deformation zone; a limited increase in the degree of uniformity of deformation across the thickness of the strip can be brought about by further decrease in  $l_d/h_{sr}$ ; 4) the strain-stress state across the width of the strip is both nonuniform and heterogeneous; 5) the length  $l_a$  of the actual deformation zone depends on the value of  $l_d/h_{sr}$ , the  $l_a/l_d$  ratio increasing from 1.5-2 at  $l_d/h_{sr} \approx 1$  to 3-3.5 at  $l_d/h_{sr} < 0.3$ .

There are 3 figures.  
Card 3/4

Investigation of the stress ....

S/148/63/000/001/006/019  
E193/E383

ASSOCIATION: Moskovskiy institut stali i splavov  
(Moscow Institute of Steel and Alloys)

SUBMITTED: August 2, 1962

Card 4/4

L 15567-63

EWP(r)/EWT(d)/EWP(k)/EWP(q)/EWT(m)/BDS AFPTC/ASD

A

8/12/63, 5/1/64, 7/1/64

AUTHORS: Porukhin, P. I.; Zneleznov, Yu. D.; Vorontsov, V. K.; Grigoryan, G. G.

TITLE: Application of optically sensitive coatings in the study of plastic deformation of polycrystalline materials

SOURCE: Fizika metallov i metallovedeniye, v. 15, no. 6, 1963, 927-929

TOPIC TAGS: polycrystalline material, coating, optical sensitivity, plastic deformation

ABSTRACT: The mechanism of grain deformation in polycrystalline solid bodies has been studied with the use of optically sensitive coatings of different optical and mechanical properties. Steel plates with grains up to 1.5 cm were coated with a plastic 1.5 mm thick on both sides and were then analyzed in reflected polarized white light. The simultaneous deformation of the coating film and the sample surface makes it possible to evaluate qualitatively the distribution of deformation by the optic effect. The variation of the isochrome picture in the process of plastic elongation was photographed with a color motion-picture camera in order to study the progress of the process. The degree of deformation in

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L 15567-63

ACCESSION NR: AP3002853

separate grains and the degree of their yield to plastic deformation were evaluated according to the speed with which the color spectrum<sup>2</sup> changed in the field of a grain. The results showed that in easily deformable grains the color change originates either in the middle of the grain and moves outward, or it originates at the periphery and moves toward the center. In the more resistant grains the color change was slow and uniform all over the field, becoming more rapid only in the last deformation stages near the grain boundaries. Orig. art. has: 2 figures.

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Institute of Steel and Alloys)

SUBMITTED: 21Aug62

DATE ACQ: 23Jul63

ENCL: 00

SUB CODE: ML, FH

NO REF SOV: 003

OTHER: 000

Card 2/2

POLUKHIN, P.I.; VORONTSOV, V.K.; PRUDKOVSKIY, B.A.

Investigating by optical methods the transition stages of the  
rolling process. Izv. vys. ucheb. zav.; Chern. met. 7  
no.1:69-77 '64. (MIRA 17:2)

1. Moskovskiy institut stali i splavov.

POLUKHIN, P.I.; VORONTSCV, V.K.; Prinimal uchastiye Pravdin, A. V., inzh.

Investigating the stress condition in rolling high ingots. Izv.  
vys. ucheb. zav.; chern. met. 5 no.8:79-86 '62. (MIRA 15:9)

1. Moskovskiy institut stali i splavov.  
(Rolling (Metalwork)) (Strains and stresses)

**POLUKHIN, P.Y.; VORONTSOV, V.K.**

Determining the components of stressed and deformed conditions  
in the plastic range by optical test data. *Izv.vys.ucheb.zav.;*  
*chern.met.* 5 no.11:80-89 '62. (MIRA 15:12)

1. Moskovskiy institut stali i splavov.  
(Deformations (Mechanics)—Testing)  
(Optical measurements)

POLUKHIN, P.I.; VORONTSOV, V.K.; ROTMAN, G.G.

Investigating the stressed and deformed state during rolling.  
Report no. 2. Izv. vys. ucheb. zav.; Chern. met. 6 no. 3:85-91  
'63. (MIRA 16:5)

1. Moskovskiy institut stali i splavov.  
(Rolling (Metalwork)) (Strains and stresses)

POLUKHIN, P.I.; ZHELEZNOV, Yu.D.; VORONTSOV, V.K.; GRIGORYAN, G.G.

Using the method of optically sensitive coatings for the study  
of plastic deformations in polycrystalline materials. Fiz. met.  
i metalloved. 15 no.6:927-929 Jo '63. (MIRA 16:7)

1. Moskovskiy institut stali i splavov.  
(Deformations mechanics) (Optical measurements)

POLUKHIN, P.I.; VORONTSOV, V.K.

Investigating conditions of stress and deformation during  
rolling. Izv. vys. ucheb. zav.; chem. met. 7 no.8:102-  
109 '64. (MIRA 17:9)

1. Moskovskiy institut stali i splavov.

ACC NR: AT7002129

(A)

SOURCE CODE: UR/0000/66/000/000/0521/0528

AUTHORS: Vorontsov, V. L.; Moskalev, V. A.; Nagibina, I. M.; Omel'chenko, D. I.; Khesin, G. L.

ORG: none

TITLE: Determining the sum of principal stresses with the aid of interferometers

SOURCE: Vsesoyuznaya konferentsiya po polarizatsionno-opticheskomu metodu issledovaniya napryazheniy. 5th, Leningrad, 1964. Polarizatsionno-opticheskiy metod issledovaniya napryazheniy (Polarizing-optical method of investigating stresses); trudy konferentsii. Leningrad, Izd-vo Leningr. univ., 1966, 521-528

TOPIC TAGS: stress analysis, optics, optic measurement, optic method, light interference, interferometer, multibeam interferometer

ABSTRACT: The construction and performance of a device used for the measurement of principal stresses in materials are described. The work was done at the Leningrad Institute of Precise Mechanics (Leningradskiy institut tochnoy mekhaniki) and the Moscow Structural Engineering Institute (Moskovskiy inzhenerno-stroitel'nyy institut). The device is the triple-plate interferometer IT (see Fig. 1). The interferometer consists of three light-separating covers A, B, and C set on glass plates. The light paths are shown in Fig. 1: rays 1 and 2 form the interference pattern of greatest intensity, and all calculations are referenced to these two. The variation of the

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ACC NR: AT7002129

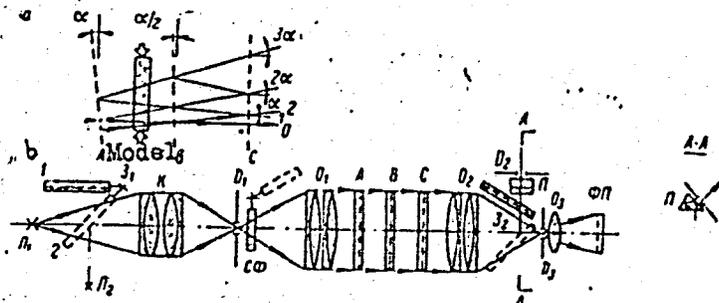


Fig. 1. Triple-plate interferometer: a - principal diagram of the device; b - optical diagram of the interferometer;  $\mathcal{L}_1$  - DRSh-250 lamp;  $\mathcal{L}_2$  - STs-76 lamp;  $\mathcal{Z}_1$  - rotating mirror for source shift; K - condenser;  $D_1$  - input diaphragm;  $C\phi$  - light filter;  $O_1$  - collimator objective;  $O_2$  - camera objective; A, B, C - interferometer plates;  $\mathcal{Z}_2$  - rotating "ocular-photo" mirror;  $D_2$  and  $D_3$  - output diaphragms;  $\Pi$  - rotating ocular prism;  $O_3$ ,  $\phi\Pi$  - photo attachment

distance between the light-separating covers may be equated with the length of the optical paths of the first and second beams. The path difference between paths 1 and 2 is given by

$$\Delta = N\lambda = 2\delta t(n-1),$$

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ACC NR: AT7002129

where  $N$  is the order of interference;  $\lambda$  - the wavelength of the light;  $\delta t$  the variation of thickness of the model;  $n$  - the refraction index of the material of the model. Also, from Hooke's Law

$$\epsilon_x = \frac{\delta t}{t} = \frac{1}{E} [\sigma_x + \mu(\sigma_x + \sigma_y)],$$

and for  $\sigma_z = 0$ , it follows that

$$\delta t = \frac{t\mu}{E} (\sigma_x + \sigma_y),$$

where  $E$  and  $\mu$  are the modulus of elasticity and Poisson's coefficient, respectively. Principal stresses are then related to the order of interference by the equation

$$N = \frac{2t\mu(n-1)}{E\lambda} (\sigma_x + \sigma_y) = K(\sigma_1 + \sigma_2).$$

The authors illustrate by example how the device may be used to determine the sum of principal stresses and each principal stress individually. The device itself is noted as being simple in construction and in use, compact, and stable with respect to vibration and temperature variation. Orig. art. has: 5 figures and 5 equations.

SUB CODE: 20, 13/ SUBM DATE: 14Jun66/ ORIG REF: 004/ OTH REF: 007

[W.A.101]

Card 3/3

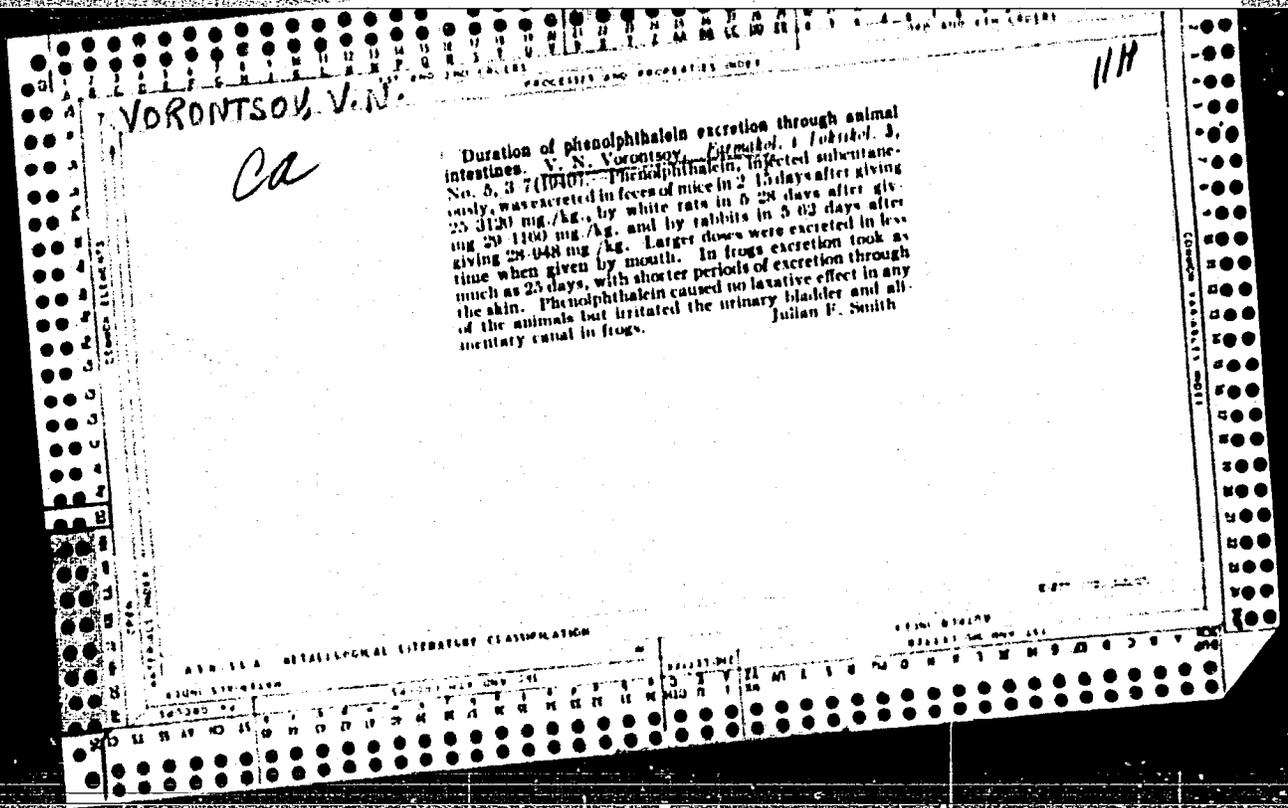
VORONTSOV, V.N., inzh.

Making cores by machines and increasing the exactness of  
cores in small-lot production. Izv.vys.ucheb.zav.; mashinostr.  
no.7/8:180-188 '58. (MIRA 12:8)

1. Moskovskiy vecherniy mashinostroitel'nyy institut.  
(Coremaking)

VORONTSOV, V.N., inzhener.

Studying the use of mass-production foundry molding machines. Lit.  
proizv.no.12:10-11 D '56. (MIRA 10:3)  
(Foundry machinery and supplies) (Machine molding (Founding))



DOMARATSKIY, A.N.; VORONTSOV, V.P.; DOVGIY, V.A.; IVANOV, I.N.; KARYSHEV, Ye.N.

Specialized computer system for statistical investigations.

Trudy Inst. avtom. i elektrometr. SO AN SSSR no.9:94-102 '64.

(MIRA 17:11)

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U. S. DEPARTMENT OF STATE  
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WASHINGTON, D. C. 20520

VORONTSOV, V.P.

Mechanism for returning the carriers in glass tempering furnaces.  
Stek. i ker. 19 no.6:32-33 Je '62. (MIRA 15:7)

1. L'vovskiy mekhanizirovannyi stekol'nyy zavod.  
(Glass factories)

VORONTSOV, V.V., kand. sel'skokhoz. nauk

Root hair and mycorhiza of the tea plant. Agrobiologia no.4:626-628  
Agrobiologia no.4:626-628 JI-Ag '59. (MIRA 12:10)

1. Filial Vsesoyuznogo nauchno-issledovatel'skogo instituta chaya  
i subtropicheskikh kul'tur, g. Chakva.  
(Tea) (Mycorhiza)

USSR/Cultivated Plants. Subtropical Tropical.

M-8

Abs Jour: Ref Zhur-Biologiya, No 5, 1958, 20537.

Author : V.V. Vorontsov  
Inst : Chakvi Affiliate of the All-Union Scientific Research Institute for Tea and Subtropical Cultures.  
Title : The Phenomenon of Atrophy in the Absorptive Root System of Tea Plants.  
(Yavleniye otmiraniya vsasyvayushchey kornevoy sistemy u chaynogo rasteniya).

Orig Pub: Dokl. VASKhNIL, 1956, No 12, 22-24.

Abstract: In the Chakvi affiliate of the All-Union Scientific Research Institute for Tea and Subtropical Cultures, the degree of destruction was determined in the Young absorptive roots of one and two year old tea seedlings by means of monthly thorough-going examination of the whole root system.

Card : 1/2

BELYANKIN, L.F.; VORONTSOV, V.V.; VOLKOVA, I.B.

Lithofacies characteristics of lower Mesozoic sediments. Trudy  
Lab.geol.ugl. no.12:199-207 '61. (MIRA 14:8)  
(Kenderlyk Valley--Coal geology)

VORONTSOV, V. V.

Vorontsov, V. V.

"The Root System of the Tea Plant and the Dynamics of Its Development."  
Min Higher Education USSR. Tbilisi, 1955 (Dissertation for the degree  
of Candidate in Agricultural Sciences)

SO: Knizhnaya letopis' No. 27, 2 July 1955

VORONTSOV, V.V., kandidat sel'skokhozyaystvennykh nauk.

Dying of the absorbing root system in the tea plant. Dokl. Akad. sel'-  
khoz. 21 no. 12:22-24 '56. (MLBA 10:2)

1. Sochinskaya opytnaya stantsiya subtropicheskikh i yuzhnykh plodo-  
vykh kul'tur. Predstavlena akademikom K.Ye. Bakhtadze.  
(Tea) (Roots (Botany))

VORONTSOV, Valentin Vladimirovich; SINITSYN, V.M., doktor geol.-  
miner. nauk, prof., otv. red.;

[Structure and conditions governing the formation of Lower  
Mesozoic coal measures in the Karaganda Basin] Stroenie i  
uslovia obrazovania nizhnemezozoijskoj uglonosnoj tolshchi  
Karagandinskogo basseina. Moskva, Nauka, 1965. 139 p.  
(MIRA 18:3)

BELYANKIN, L.F.; VORONTSOV, V.V.

Short review of the history of the study of lower Mesozoic  
sediments in the Kenderlyk trough. Trudy Lab.geol.ugl. (MIRA 14:8)  
no.12:177-179 '61.  
(Kenderlyc Valley--Coal geology)

BELYANKIN, L.F.; VORONTSOV, V.V.

Geological characteristics of lower Mesozoic sediments in the  
Kenderlyk trough. Trudy Lab.geol.ugl. no.12:188-199 '61.

(MIRA 14:8)

(Kenderlyk Valley—Coal geology)

VORONTSOV, V.V.

Paleogeography of the Kenderlyk trough during the lower Mesozoic  
sedimentation. Trudy Lab.geol.ugl. no.12:232-234 '61.

(MIRA 14:8)

(Kenderlyk Valley--Paleogeography)

1ST AND 2ND ORDERS

PROCEDURES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

VORONOV, S.M.

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VORONOV, S. M. *Gases in Aluminium Alloys and Methods for the Degassing of*  
*Melts.* [In Russian.] Pp. 49. 1938. Moscow: NKOP.

COMMON ELEMENTS

COMMON VARIABLE INDEX

OPEN

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ASTM-ISA METALLURGICAL LITERATURE CLASSIFICATION

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VORONTSCV, V. Ye.

Vorontsov, V. Ye. "Influence of temperature during the drying of the fruit and seeds of tung on the yield and quality of tung oil", *Bulleten' Vsesoyuz. nauch.-issled. in-ta chaya i subtrop. kul'tur*, 1948, No. 4, p. 147-53.

SO: U-3042, 11 March 53, (Letopis 'nykh Statey, No. 10, 1949).

VORONTSOV, Yevgoniy Andreyevich; CHEREPANOV, B.I., red.; KHOMENKO,  
V.A., red.; ISUPOVA, N.A., tekhn. red.

[Yalta; handbook and guide]Ialta; putevoditel'-spravochnik.  
Izd.2. Simferopol', Krymizdat, 1962. 125 p. (MIRA 15:11)  
(Yalta---Guidebooks)

VORONTSOV, Yevgeniy Andreyevich, krayevod; BAYEV, Yevgeniy,  
red.

[Yalta; a guidebook and directory] IAlta; putevoditel'-  
spravochnik. Simferopol', Izd-vo "Krym," 1965. 126 p.  
(MIRA 18:6)

VORONTSOV, Ye. A.  
USSR/Zoology

Card 1/1

Author : Vorontsov, Ye. A.

Title : A Rapana mollusk on the Crimean coast

Periodical : Priroda, 5, page 116, May 1954

Abstract : A Rapana mollusk was recently fished out in the Yaltinsk harbor (Black Sea). This gastropoda was the first ever seen in that region. The dimensions of its shell were 8 cm, 10.5 cm. The external color was brown and the internal orange. The inside of the shell has a bright violet color. The shell is now in the Yaltinsk Museum of Natural Sciences.

Institution : Museum of Natural Sciences, Yaltinsk

Submitted : ....

CHERNOBYL'SKIY, I.I. [Chornobyl's'kyi, I.I.], doktor tekhn. nauk; TANANAYKO,  
Yu.M; VORONTSOV, Ye.G. [Vorontsov, IE.H.]

Measuring the thickness of the film of a down-flowing fluid.  
Khim. prom. no.4:37-39 O-D '64. (MIRA 18:3)

CHERNOBYL'SKIY, I.I. [Chornobyl's'kyi, I.I.], kand. tekhn. nauk; VORONTSOV, Ye.G.  
[Vorontsov, I.E.H.]

Minimum spraying density of film apparatus. Khim. proc. [Ukr.]  
no. 2:54-55 Ap-Je '65. (MIRA 18:6)